REMARKS

Status of Case

Claims 4-10, 12-14, and 17-31, and 33-58 are currently pending in this case.

Claim Rejections under 35 U.S.C. §112

Claims 11-14, 41-43 and 52-54 were rejected under 35 U.S.C. §112, second paragraph as being indefinite. Applicants amend the claims where it is believed appropriate.

Claim Rejections under 35 U.S.C. §§102, 103

Claims 4, 5, 7, 9, 11, 12, 15, 16, 21, 22, 24-26, 33, 34, 37-40, 45-48, 50-51, and 56-58 were rejected under 35 U.S.C. §103(a) as being unpatentable over Gerzon et al. (U.S. Patent No. 5,757,927) in view of Waller et al. (U.S. Patent No. 7,035,413). Claims 6 and 23 were rejected under 35 U.S.C. §103(a) as being unpatentable over Gerzon et al. in view of Waller et al. and further in view of Vaughn et al. (U.S. Patent Application No. 2004/0114771). Claims 13, 14, 27 and 30 were rejected under 35 U.S.C. §103(a) as being unpatentable over Gerzon et al. in view of Waller et al. and further in view of Liu (U.S. Patent No. 6,349,285).

Claims 4, 21, 37-39, 47, 50, and 58 as currently presented recite producing n initial low frequency signals that comprise portions of the n audio input signals that are at most a cut-off frequency, producing additional low frequency input signals from the n initial low frequency signals, and bypassing decoding of the n initial low frequency and additional low frequency signals. See the following independent claims:

Claim 4: "producing n initial low frequency input signals that comprise portions of the n audio input signals that are at most about a cut-off frequency";
"producing at least one additional low frequency input signal from the n initial low frequency input signals";
"bypassing decoding of the n low frequency input signals and the additional low frequency input signal by any matrix decoding technique"

claim 21: "a bass management module . . . configured to produce n initial low frequency input signals comprising portions of the plurality of audio input signals that are

at most about a cut-off frequency, produce at least one additional low frequency input signal from at least one of the n initial low frequency input signals"

"a plurality of low frequency input channels in communication with the bass management module, configured to separately communicate each of the n initial low frequency input signals and the additional low frequency input signal, and bypass any matrix decoder module, where the n initial low frequency input signals, the additional m-n low frequency input signal, and the m high frequency output signals comprise the plurality of audio output signals.");

claim 37: "a bass management module . . . configured to produce n initial low frequency input signals comprising portions of the plurality of audio input signals that are at most about a cut-off frequency, an additional m-n low frequency input signals from the n initial low frequency input signals"

"a plurality of low frequency input channels in communication with the bass management module configured to separately communicate each of the n initial low frequency input signals and the additional m-n low frequency input signals, and bypass any matrix decoder module, where the n initial low frequency input signals, the additional m-n low frequency input signals, and the m high frequency output signals comprise the plurality of audio output signals"

claim 38: "bass management means for producing n initial low-frequency input signals that include portions of the plurality of audio input signals that are at most about a cut-off frequency, an additional m-n low frequency input signals from the n initial low frequency input signals"

"means for separately communicating each of the n initial low frequency input signals and the additional m-n low frequency input signals, and bypassing any matrix decoder means, where the n initial low frequency input signals, the additional m-n low frequency input signals, and the m high frequency output signals comprise the plurality of audio output signals"

claim 39: "producing at least n+1 low frequency input signals that comprises portions of at least some of the plurality of audio input signals that is at most about a cut-off frequency"

"bypassing the at least n+1 low frequency input signals by any matrix decoding technique"

claim 47: "producing at least one low frequency input signal as a function of the initial low frequency input signals such as the at least one low frequency input signal and the initial plurality of low frequency input signals comprises at least n+1 low frequency signals"

"bypassing the at least one low frequency input signal and the initial plurality of low frequency input signals by the matrix decoding technique"); claim 50 ("a bass management module in communication with the plurality of audio input signals, configured to produce at least n+1 low frequency input signals that comprises a portion of at least some of the plurality of audio input signals that is at most about a cut-off frequency"

"at least n+1 low frequency input channels in communication with the bass management module configured to bypass the at least n+1 low frequency input signals from any matrix decoder module"

claim 58: "a bass management module in communication with the plurality of audio input signals, configured to produce n initial low frequency input signals by removing frequencies that are above about the cut-off frequency from at least some of the plurality of audio input signals and to produce m-n low frequency input signals as a function of the initial low frequency input signals"

"a plurality of low frequency input channels in communication with the bass management module configured to bypass the n initial low frequency input signals and the m-n low frequency input signals from any matrix decoder module, where the n initial one low frequency input signals, the m-n low frequency input signals, and the plurality of decoded signals comprise the plurality of audio output signals".

An example of this is disclosed in the following figure:

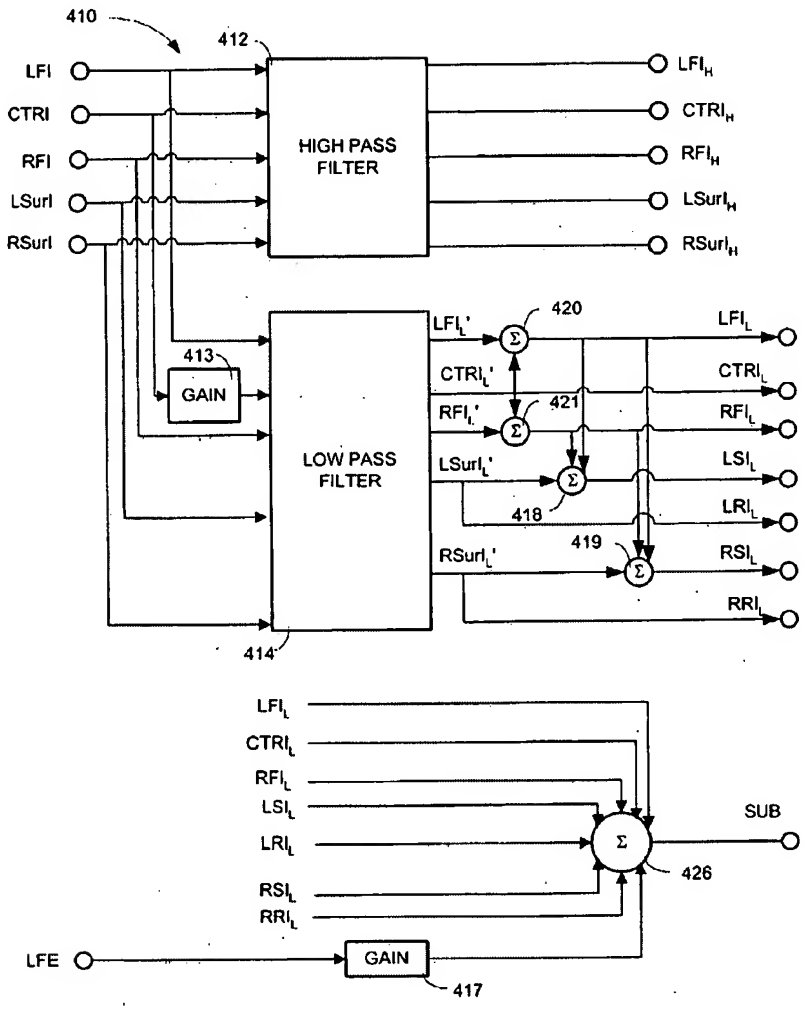
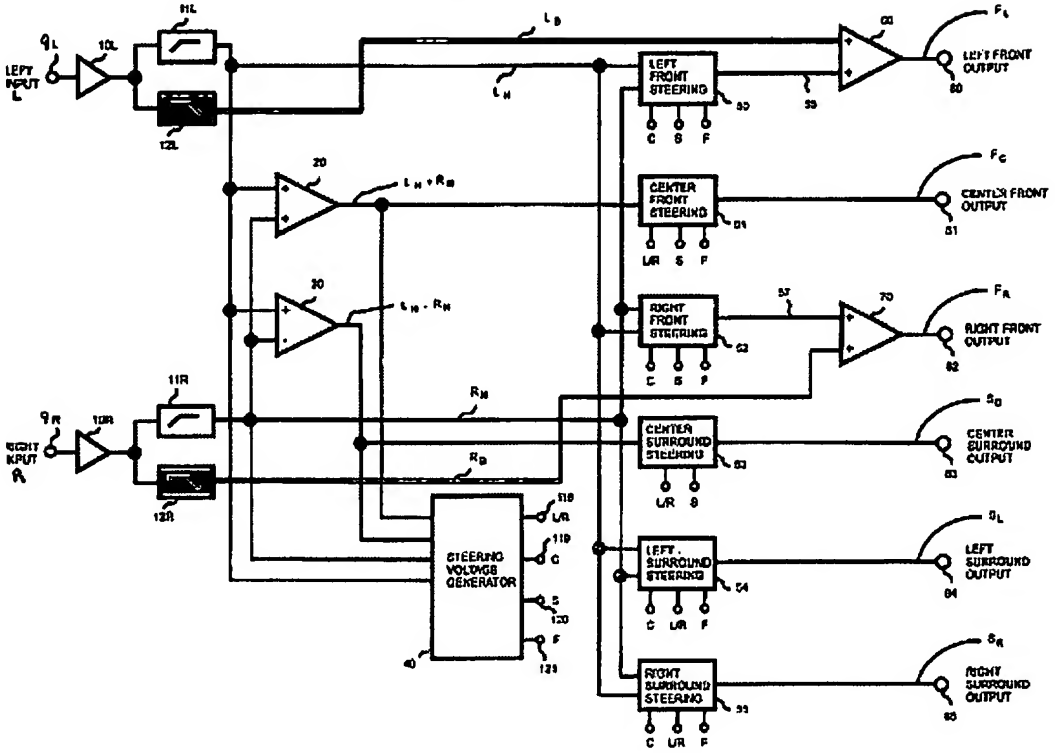


FIG. 4

This is in contrast to the cited references, including the Gerzon and Waller references. As discussed previously, the Gerzon reference fails to teach bypassing decoding of the lower frequencies. Further, the Waller reference teaches filters 12L and 12R that filtering of the lower frequencies of the input signals (left input signal and right input signal). The outputs of the filters are then fed directly to a summers 60 and 70, for combination with the high frequency signals for the left and right output signals, as depicted in Figure 1 of the Waller reference (reproduced below with additions in red):

FIGURE 1

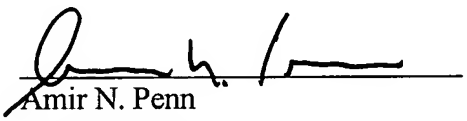


Thus, the Waller reference merely teaches that the same input low frequency input signal is passed to the output signal, without any modification, and without using the low frequency signals for any of the other output channels. This is in contrast to claims 4, 21, 37-39, 47, 50, and 58 as currently presented. Therefore, the claims as currently presented are patentable over the cited references.

SUMMARY

Applicant respectfully requests the Examiner to grant early allowance of this application. The Examiner is invited to contact the undersigned attorneys for the Applicant via telephone if such communication would expedite this application.

Respectfully submitted,



Amir N. Penn
Registration No. 40,767
Attorney for Applicant

BRINKS HOFER GILSON & LIONE
P.O. BOX 10395
CHICAGO, ILLINOIS 60610
(312) 321-4200